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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/008,235	11/07/2001	Jennifer L. Lee	55393US011	1507
32692	7590	04/04/2005	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY			BERMAN, SUSAN W	
PO BOX 33427			ART UNIT	
ST. PAUL, MN 55133-3427			PAPER NUMBER	

1711

DATE MAILED: 04/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/008,235

Applicant(s)

LEE ET AL.

Examiner

Susan W. Berman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-64 is/are pending in the application.
- 4a) Of the above claim(s) 1-7 and 28-63 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-27, 64 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment and Arguments

Applicant's arguments, see the Remarks, pages 12-13, filed January 21, 2005, with respect to the rejection(s) of claim(s) 8-27 and 64 as being unpatentable over WO 98/271171 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the disclosure of ink jet ink compositions disclosed in WO 99/29787.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 27 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There is no antecedent basis in claim 19 for the recitation of a first monomer and a second monomer, as set forth in claim 27. It is believed claim 27 was intended to depend from claim 26.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-27 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/29787. WO '787 discloses radiation curable ink jet ink compositions having a viscosity no greater than 35 mPa.s at 30 °C. WO '787 teaches compositions comprising a photoinitiator and oligomers such

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as polyester-, urethane- and epoxy-acrylates. A reactive liquid material comprising mono- and di-functional acrylates is taught. Preferred monofunctional acrylates, used in amounts from 20 to 60 wt. %, are tetrahydrofurfuryl acrylate and isobornyl acrylate and acrylates of alkoxylated alcohols, e.g. 2-(2-ethoxyethoxy)ethyl acrylate or vinyl monomers such as N-vinyl 2-pyrrolidone (pages 9-10 and 15). Difunctional acrylates having the required low viscosity, preferably at least 5 wt. %, include diacrylates of hexanediol or neopentyl glycol, etc (pages 10-11 and 16). Tri-functional acrylates specifically taught are alkoxylated acrylates in amounts from 10-30 wt % (pages 11 and 16). The examples in Tables 1-3 disclose compositions comprising isobornyl acrylate and an ethoxylated triacrylate monomer with a urethane acrylate prepolymer and a photoinitiator.

The difference between the disclosed compositions and the instantly claimed compositions is that applicant requires that the reactive diluent include a high Tg component and 0.1 to 50 wt % adhesion promoting component comprising a heterocyclic radiation curable monomer or a monomer containing a pendent alkoxylated moiety. However, WO '787 teaches preferably including tetrahydrofurfuryl acrylate as monofunctional acrylate and also teaches including acrylates of alkoxylated alcohols, e.g. 2-(2-ethoxyethoxy)ethyl acrylate. Thus, It would have been obvious to one skilled in the art at the time of the invention to employ mixtures of mono-functional acrylates in the reactive diluent mixture comprising mono- and di- functional acrylates taught by WO '787. It would further have been obvious to one skilled in the art at the time of the invention to select isobornyl acrylate, thus providing applicant's high Tg component, because isobornyl acrylate is said to be preferred and is used in the examples. It would have been obvious to one skilled in the art at the time of the invention to employ tetrahydrofurfuryl acrylate and/or 2-(2-ethoxyethoxy)ethyl acrylate as monofunctional monomers in the disclosed compositions, thus providing applicant's adhesion promoting component, since these monomers are specifically mentioned as being preferred. One of ordinary skill in the art at the time of the invention would have been motivated

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by the teaching of WO '787 that these monomers are preferred and provide the required viscosity for ink jet ink printing, in the absence of a showing of unexpected results therefrom.

With respect to claims 14 and 26, It would have been obvious to one skilled in the art at the time of the invention to determine the weight percents of specific monomers required to obtain the desired viscosity and other properties from the teachings of WO '787. With respect to claim 23, It would have been obvious to one skilled in the art at the time of the invention to employ N-vinylcaprolactam as the monofunctional vinyl monomer because it is analogous to the disclosed N-vinylpyrrolidone taught by WO '787. With respect to claim 24, It would have been obvious to one skilled in the art at the time of the invention to employ propoxyethyl (meth)acrylate as a monofunctional monomer in the reactive diluent because WO '787 teaches using an acrylate monomer of an alkoxyated alcohol. With respect to claim 25, It would have been obvious to one skilled in the art at the time of the invention to employ diacrylate of neopentyl glycol in the reactive diluent because WO '787 teaches that this monomer has a suitable low viscosity. With respect to claims 26 and 27, It would have been obvious to one skilled in the art at the time of the invention to employ both tetrahydrofurfuryl acrylate and 2-(2-ethoxyethoxy)ethyl acrylate as monofunctional monomers in the disclosed compositions and to determine the amounts of each required to obtain the desired properties. One of ordinary skill in the art at the time of the invention would have been motivated by a reasonable expectation of providing a radiation curable ink jet ink free of non-reactive diluent and having the desired viscosity, surface tension, volatility, stability and drying rate, as taught by WO '787, because WO '787 specifically teaches the monofunctional and difunctional materials set forth in the instant claims.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759

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F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 8-27 and 64 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of U.S. Patent No. 6,534,128. Although the conflicting claims are not identical, they are not patentably distinct from each other because the components of the compositions meeting the definitions set forth in the claims can be the same components although the definitions are not identical. The oligomers set forth in the claims of US '128 are aliphatic urethane acrylate oligomers. The radiation curable reactive diluent set forth in the claims of US '128 considered in view of the disclosure of the components providing the reactive diluent comprises the instantly claimed reactive diluent since the same components as disclosed are set forth in the instant claims.

Claims 8-27 and 64 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 of U.S. Patent No. 6,558,753. Although the conflicting claims are not identical, they are not patentably distinct from each other because the components of the compositions meeting the definitions set forth in the claims can be the same components although the definitions are not identical. The oligo/resin is set forth in the claims of US '753 and in the instant claims. The radiation curable reactive diluent set forth in the claims of US '753 considered in view of the disclosure of components providing the reactive diluent comprises the instantly claimed reactive diluent because the same components as disclosed are set forth in the instant claims.


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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan W. Berman whose telephone number is 571 272 1067. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571 272 1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Susan W Berman
Primary Examiner
Art Unit 1711

SB
3/29/05